Office of the
DEPUTY CHIEF
MANAGEMENT OFFICER

BEA Configuration Management Document

March 15, 2012

Version History

Version	Publication Date	Author	Summary of Changes
2.1	January 17, 2004	BEA Team	Release 2.1
2.2	April 30, 2004	BEA Team	Release 2.2
3.0 Final	July 1, 2005	BEA Team	Final updates after Tech Writing
4.0	January 13, 2006	BEA Team	Updates based on new End-to-End process
4.0	January 24, 2006	BEA Team	Updates from government review of delivered document
4.0	February 8, 2006	BEA Team	Additional updates from government review of delivered document
4.1	February 10, 2006	BEA Team	Final updates – Redelivered to Client
4.2	November 30, 2006	BEA Team	Updates based on Call 12
4.3	November 16, 2007	BEA Team	Updates based on transition of contract
5.0	January 9, 2008	BEA Team	Updates to document to reflect changes to contract, roles and process.
6.0	April 30, 2008	BEA Team	Reformatted and updated many sections to comply with ISO standards
7.0	April 30, 2010	BEA Team	Updated with CM Glossary, Configuration Items list, and CCB Charter. Referenced new CCP
8.0	March 11, 2011	BEA Team	Merges the CM Plan and the CCP into one document. Updates the CR process into one standard for all CRs. Updates the CCB write-up. Updates the notification processes. Incorporates general updates across the document.

9.0	March 15, 2012	BEA Team	Updates template to DCMO technical document and changes references to A&IM to TI&E. Removes references to BTA and EP&I.

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1. Introduction

1.1. Purpose

The purpose of Configuration Management (CM) is to apply technical discipline and administrative direction and surveillance by establishing and maintaining the integrity of selected products (e.g., Configuration Items [CI]) at given points in time throughout the project's lifecycle. CM provides a systematic approach to managing the changes to the architecture through Change Requests (CRs) and Tickets, while also using a managed, accountable approach to the version control of documents. Other CM tasks include systematically controlling changes, maintaining the integrity and traceability of the configuration items throughout the project's lifecycle. Work products placed under configuration management include those delivered to the Government (e.g., the Architecture Product Guide [APG] and other items identified with or required to create the products).

Configuration control is established to maintain a systematic process that provides efficient processing and implementation of changes to CIs. It is used to manage the proposal, evaluation, coordination, and disposition of proposed changes and the implementation and integration of approved changes. Similarly, it is used to define the management of documents and aid in the monitoring of process execution.

To accomplish its business mission, the Technology, Innovation and Engineering Directorate (TI&E) in the Office of the Deputy Chief Management Office (ODCMO) utilizes a number of software applications and support products in a network environment. The three principal tools used are System Architect (SA), Enterprise Elements (EE), and Defense Knowledge Online (DKO). SA is the supporting architecture tool for the Business Enterprise Architecture (BEA) to include the database and product diagrams. It is managed by the BEA Service Delivery team and primarily used by the BEA Development team. Currently EE is the location for managing the three architecture change mechanisms (BEA Improvement Proposals (BIPs), CRs, and Tickets) by CM. It also provides architecture tool support to the architects. DKO is home to the CM library that provides Document Management and version control. DKO is also the location for Stakeholders and external users to report issues for evaluation and possible creation of a CR or Ticket via CM to the BEA Team. It also houses the documents linked to the BEA website.

1.2. Scope

This *Configuration Management Document* (CMD) defines the processes associated with establishing, documenting, maintaining, and controlling attributes for the BEA, BEA-related program deliverables, BEA-associated products (tools/databases) and BEA-related plans, processes, and procedures. CM, as described herein, is to be performed in accordance with this plan. CM is performed by the CM team and other teams as identified in this document.

This CMD describes Configuration Management processes required for:

- **Configuration Identification:** The process of selecting the CIs and recording their functional and physical characteristics in technical documentation. Configuration Identification establishes the configuration item baseline. See Appendix C. Program Work Statement (PWS) Deliverable Configuration Item List (CIL).

- **Configuration Control:** The evaluation, coordination, approval or disapproval, and implementation of changes to configuration items after formal establishment of their

configuration identification. The outcome of this is the establishment of a new baseline for a specific item. This includes change requests (CR) and Tickets for the BEA and supporting documents such as the APG and the CMD.

- **Configuration Status Accounting:** The process of recording and reporting information needed to provide current status on configuration item(s). (e.g., summarized CR and Ticket status reports from EE)

- **Configuration Audits and Reviews:** As the principal means of configuration authentication, configuration audits are scheduled before each delivery of the release. Configuration audits ensure that CIs are part of the delivery baseline. The Physical Configuration Audit ensures the necessary deliverables (and content) is part of the release delivery.

- **Change Management Tools:** The tools and products for data collection and retention in support of Configuration Management. EE supports the change control of CRs and Tickets and DKO supports the CM Library where non-architecture deliverable CIs are retained along with other document and artifacts. In addition, DKO serves as a secure storage area for documents: e.g., Word, Excel, and Adobe linked to the BEA Release website.

This document applies to work products created or managed by the A&IM staff as well as tools and infrastructure under its control. These include:

- Software and architecture that is in development, in beta test, or has been released for use
- Requirements specifications
- Processes and Procedures
- User and technical documentation
- Software products that provide the underlying infrastructure and support for the deliverables; e.g., EE

In addition, the Core Business Mission (CBM) areas have a primary responsibility to:

- Develop BIPs
- Obtain approval from the Investment Review Board (IRB) for developed BIPs and setting their priority, in conjunction with the A&IM staff,
- Verify work completed within the scope of the BIP for accuracy and completeness
- Vote on completed CRs to mark completion

1.3. Performance Work Statement Requirements

This *Configuration Management Document* has been updated as required in Task 8 of the Performance Work Statement (PWS) dated September 10, 2007.

2. Configuration Management Infrastructure

The content of this BEA CMD has been developed by adapting the ANSI/IEEE STD 828-2005, *Standard for Software Configuration Management Plans*, to establish and maintain the integrity of program deliverables and designated work products. The primary deliverable is the BEA.

This CMD describes the high-level CM processes required for the following:

- **Configuration Control Board (CCB):** Controls how architecture and support product changes are managed
- **Configuration Identification:** Identifies the baselined items to be managed.
- **Configuration Control:** Controls how changes are made to the configuration baselined items.
- **Configuration Status Accounting:** Provides information about the changes that have been applied to the configuration item.
- **Configuration Audits and Reviews:** Verifies that CM processes are consistently followed.
- **Change Management Tools:** Provides the procedures and tools for monitoring data collection and retention in support of Configuration Management.

All teams will perform CM of the BEA CIs in accordance with this plan.

2.1. Roles and Responsibilities

TI&E is responsible for the overall management of the CM Program for the BEA. TI&E is the approval authority for program contract deliverables and provides guidance to the CM Team.

While the CM Team is responsible for maintaining the CM standards and administering the CM tools, following generally accepted industry standards, the practice of Configuration Management is the responsibility of all members of the TI&E. Table 2-1, CM Team Roles and Responsibilities, describes CM-oriented responsibilities as they pertain to the BEA.

Table 2-1, CM Team Roles and Responsibilities

CM Team Roles	Responsibilities
Configuration Management (CM) Team Lead	• Coordinate CM-related activities • Develop, execute, and plan the CM process improvements/upgrades as necessary • Participate in configuration reviews • Produce/distribute CM reports • Provide CM/tool training and support

CM Team Roles	Responsibilities
	• Manage the CMD • Review/approve the CMD • Manage the CM Process • Manage the Configuration Control Board (CCB) • Develop/maintain CCB procedures • Review Lessons Learned for each BEA Release • Report the status of CM Program activities to senior management • Assist management in identifying, gathering, and reporting metrics data resulting from CM activities • Identify requirements for the development of any new and revised CM tool applications • Manage configuration audits and reviews as required
Configuration Management (CM) Team	• Implement configuration management processes and procedures in daily activities • Assist Team Lead in CM related activities • Assist users with CM related issues • Manage user access rights to tools • Facilitate configuration audits and review as required • Monitor Workshop execution through audits and reports to the Workshop Facilitator • Manage the CM environments (DKO CM Library, DKO BEA Release documents, and EE) • Assist in the running of the CCB (e.g. prepare agendas, send notices, review minutes) • Create and manage CM library as required • Participate in configuration reviews • Provide CI metrics data as requested • Produce CR and Ticket status reports • Assist in the identification of non-contractual

CM Team Roles	Responsibilities
	CIs • Control changes to established baselines in the CM Library • Conduct Physical Configuration Audits (PCAs) • Review Lessons Learned for each BEA Release • Update and maintain the CMD • Move CRs and Tickets to the Development, Cancel or Complete states as necessary.

The CM Team interacts with and assists other teams in executing their CM roles and responsibilities. Listed below in Table 2-2 are CM-oriented responsibilities as they pertain to the BEA.

Table 2-2, CM Roles and Responsibilities of Other Teams

Team	Responsibilities
BEA Development Branch	• Develop the content of a CR for the architecture, following CM processes and procedures • Develop and maintain assigned architecture CIs in SA (e.g. Operational Activity Model and Business Process Model) • Ensure CI baselines and revisions are maintained in the CM Library for supporting document (e.g. APG and BDM) • Communicate concerns, or problems associated with the change request using the EE issues capability • Place processes, procedures, and documents under version control in the CM Library • Review CRs and maintain the CR supporting documentation in EE • Support and explain CRs and Tickets at the CCB • Advance CRs and Tickets to the next state of the lifecycle except for Development, Cancel and Complete
Independent Verification and Validation (IV&V) Team	• Review CM procedures for clarity and standards • Monitor the overall BEA development process

Team	Responsibilities
	• Participate in Workshops, CCBs, Standup Meetings, etc. • Produce reports for management based upon reviews performed
DCMO IT Support Team	• Maintain the System Architect (SA) tool • Install software upgrades based upon notification from the BEA Service Delivery Team: – Of the database – Of the SA Tool – Of the EE Tool – Of any other application, network, or communication software that may impact the Build process • Follow standard procedures for storage and backup of supported systems and software under their control • Create, maintain, and test contingency plans and actions (Continuity of Operations Plan (COOP)) • Notify the BEA Service Delivery Team in the event of system problems, issues, corrective actions and time parameters of impact.
BEA Service Delivery Branch	• Work with the IT support team to have the SA and EE tools available and operational for supporting the BEA processes • Make backups of all the SA architecture builds and store them in the network files for safety and availability • Make backup of EE on an as-needed basis • Maintain settings, add-ins, and configuration changes made to the out-of-the-box architecture software products to ensure a working application can be restored if required • Review IT Support Team identified changes, determining impact on operations and testing changes made prior to operational use

Team	Responsibilities
	• Identify project CIs • Apply version control procedures to all CIs • Comply with the CMD • Control the project's software environments and baseline updates • Manage the project's CM workspace • Participate in configuration audits
TI&E Division Manager	• Review and approve CM documents

2.2. Configuration Control Board

A Configuration Control Board (CCB) has been established to manage changes to the BEA, the BEA website, user property modifications to SA, changes to EE and the in-house developed products run on EE. These changes are documented in CRs, developed from BIPs and from Tickets which request non-content changes to the architecture such as website Hypertext Markup Language (HTML) and EE changes.

The responsibilities of the CCB include:

- Oversee incorporation of the architecture change requests to the BEA.
- Ensure BEA change requests are sufficiently defined.
- Review architecture change requests for scope and impact.
- Ensure proper coordination, approval, and incorporation of routine architecture maintenance changes to the BEA in accordance with defined criteria.
- Provide recommended solutions, impact assessments (including inter- and intra-Stakeholder impacts), and resource trade-off analyses for BEA change requests.
- Oversee configuration control of the BEA work products, tracking changes through completion, to include resolution of unforeseen issues resulting from the development of changes to the architecture.
- Record, allocate, and track CCB approved BEA CRs and Tickets

Change Requests and Tickets obtain their Government approval through the CCB process. After analysis is conducted upon the work requested in CRs and Tickets, they are scheduled for review and approval by the CCB. If approved they are moved to the Development state for work to proceed. If approval is not obtained they can be returned for additional analysis and return to the CCB for re-consideration or be cancelled if deemed necessary.

CR and Ticket assignees present their assigned items and answer questions at the CCB. A vote is taken to determine the CR or Ticket's next state. The voting members at the CCB are the BEA Chief Technical Lead (Government), BEA Chief Technical Lead (Contractor), and the Configuration Manager or their representatives.

Updates are made to the CRs and Tickets in EE based upon the results of the CCB. The Agendas and Meeting Minutes for the CCBs are filed in the Configuration Control Board folder in the CM Library.

2.3. Configuration Identification

The objective of Configuration Identification is to identify and document the approved configuration of the functional and physical characteristics of items that are to be placed under configuration control. The baseline of these items is established as part of the PWS and may only be changed through the modification of the PWS through the mutual agreement of the Government and contractor managers. The PWS is located at Appendix C.

The following sections describe the selection, categorization, and designation of configuration items.

2.3.1. Identification of Configuration Items

Configuration Identification entails identifying, naming and documenting functional and physical characteristics of CIs. Once items are identified, they are moved into a controlled environment. Configuration Items can be separated into two categories:

1. Formal CIs (Baseline CIs).
2. Informal CIs (Managed and Controlled).

Formal CIs are deliverables or major milestones for the project having an approved baseline that can only be changed through a formal approval process. This includes architecture releases and non-architecture version controlled documents (e.g. APG and CMD). Version controlled documents are managed and controlled via a check-in process to the CM Library on DKO.

Table 2-3 provides examples of the version controlled documents managed in the CM Library.

Table 2-3, Version Controlled Non-architecture Deliverables

Version Controlled Non-architecture Deliverables
Updated Architecture Build Processes and Procedures
Updated Architecture Package and Delivery Processes and Procedures

Updated BEA Development Methodology
Updated Architecture Product Guide
Updated Configuration Management Document
Configuration Status Reports

Informal CIs include all other documentation and derived work products produced by the project, but whose baseline is not controlled by the formal process described in this plan.

Configuration identification activities identify, name, and describe documented physical and functional characteristics of code, specifications, design, and data elements to be controlled for the project. Each CI is uniquely named, describing activities performed to define, track, store, and retrieve CIs.

2.3.2. Designation of Configuration Items

The formal CIs are identified in the PWS. Typical non-architectural deliverables consist of those items listed in the PWS (e.g., APG and status reports). In addition to the formal CIs, any other deliverables decided upon, and agreed to, by DCMO and the prime contractor are included in the CIL. These CIs may include plans, procedures, process descriptions, checklists and other types of documents that describe "how to" or assist in the work effort.

The CIL is a living document and can be updated as needed based on mutual agreement between the Government and the contractor. The contractor Team PMO will inform the CM Team when new CIs are identified or existing CIs are modified during the course of the program.

2.4. Configuration Change Control

The objective of configuration change control is to maintain the integrity of CIs and prevent unauthorized changes to the baseline by establishing and maintaining a systematic change process.

2.4.1. Baseline Management

A baseline represents a snapshot in time and provides an official standard on which subsequent changes are to be made. The approved Architecture baseline, which is maintained in SA and managed by the Service Delivery Team, serves as the basis for future development and is only changed through the formal configuration control procedures. Builds are done on a daily basis. The final build in the development process becomes the release version and the new baseline upon which to build forward. The full process is documented in the *Architecture Build Processes and Procedures*.

Formal baseline management enables:

- Evolution of CIs using the current baseline as an agreed upon starting point
- Reproducibility of a previous version of a program CI
- Traceability of the revision history of project artifacts

- Ability to provide a comparison of the contents of one baselined version against another

2.4.2. Configuration Control Process

Separate configuration control processes are defined for architecture products and non-architectural deliverables. These processes encompass requesting changes, evaluating changes, approving/disapproving changes and implementing changes.

2.4.2.1. Configuration Control Process for the BEA Encyclopedia

Section 3 describes configuration control of changes to BEA-related products. Changes to the BEA are accomplished through the use of BIPs, CRs, and Tickets. Configuration management principles are incorporated into this process to ensure necessary configuration control of changes to the architecture baseline.

In addition to CM of the BEA Architecture baselines, the Configuration Control Process represents change control of CRs and Tickets from creation to closure. The configuration management of these two change mechanisms is accomplished through the EE tool where they are created, statused, and retained. The CMD depicts the steps required for creation, approval, development, review, and completion or cancellation of a CR or Ticket and the states they can be assigned.

2.4.2.2. Configuration Control Process for Non-architectural Deliverables

The *Delivery Process Guide* describes configuration control of changes to non-architectural deliverables. The guide "…defines and documents the processes used to produce and deliver deliverables that meet or exceed the performance standards and quality levels specified in the PWS". Non-architectural deliverables which need to be under version control consist of a subset of those items listed in the PWS (e.g., APG, CMD, and BDM). All such documents will be under version control and maintained in the CM Library on DKO. The DKO tool performs these additional functions:

- Supports multiple control levels of CM based on the user role
- Helps in the use of product standards for configuration items
- Provides for the storage and retrieval of archived versions of configuration items
- Ensures correct creation of products from the baseline library
- Provides for storage, update, and retrieval of CM records
- Supports production of CM reports
- Maintains library structure and contents

Non-architectural deliverables such as weekly status reports are not version controlled and not retained in the CM Library.

2.4.3. Version Control Process

Version control of a document is the process of managing modifications to revisions and maintaining the multiple revisions of that document throughout its lifecycle. The contractor determines the CI owners who are responsible for the development and maintenance of the CIs assigned to them. Owners of version

controlled non-architecture deliverables coordinate with the CM Team to place new versions into the CM Library on DKO. Individuals have access to the library and can obtain a copy on their own.

The SA tool, its application files/settings/add-ons, and the database files, which maintain the products generated by the tool, are under the version control supplied by the DCMO IT Support Division. The nature of the SA database does not support the numbering of data, changes and files. Changes that are made are documented and recorded in CRs and Tickets in the EE tool to the extent changes are requested, made and verified. These SA artifacts are not accounted for in EE, but are created, stored and held for backup, reference, comparison and for COOP processes by the DCMO IT Support Group.

The BEA is stored in the SA tool. On a routine basis, incremental updates are made to the BEA baseline in SA. These updates are called "builds." Each build incorporates changes modifying the BEA. Each change is supported by a CR, but may be incorporated across one or multiple builds and is accomplished in the development environment. The completion of all the incremental updates/builds results in a new release of the BEA. Each new release establishes a new baseline for the next release. The *Automated Build Process and Procedures* details the steps to update the BEA.

During the development of the SA encyclopedia (a database), each build created by the build team is archived as a snapshot file and stored on the network server. Maintenance of these snapshot files is routine backup support provided by the Service Delivery Team. Version control of the SA tool, its database backups, system files, and application files are also done by the Service Delivery Team as an additional backup to the DCMO IT Support Division. This is done on a precautionary basis and provides a more rapid recovery mechanism as well as allows for comparison between builds to validate that the authorized changes have been made, and that those changes are traceable.

2.5. Configuration Management Resources

2.5.1. Configuration Management and Control Tools

The DCMO IT Support Group installs and maintains the infrastructure (tools, network, servers, etc.). This includes tools necessary for the CM team to conduct configuration management.

The CM Team uses commercial off-the-shelf (COTS) software products to perform its activities for CM data collection. The support tools used by the CM Team for data collection are listed in Table 2-4.

Table 2-4, CM Tools for Data Collection

COTS Tool	Description	Function
Enterprise Elements v5.2	Change control (CRs and Tickets)	Configuration Management
Defense Knowledge Online (DKO)	Version control (Library functions)	Configuration Management

The two principle tools used are EE and DKO. Currently EE is the location for managing the three architecture change mechanisms (BIPs, CRs, and Tickets). DKO is home to the CM library that provides Document Management and version control. DKO is also the location for Stakeholders and external users to report issues for evaluation and possible creation of a CR or Ticket via CM to the BEA Team.

Configuration Control encompasses activities and tools required to identify, evaluate, coordinate, approve, reschedule, implement and distribute changes proposed to a baseline(s). EE is the configuration control tool of choice used to manage BIPs, CRs, and Tickets. EE allows a user to document requested changes to architecture products, to establish priorities, to assign ownership, to track the change from submission to resolution, and to maintain a history of these activities as they progress through the various states of the process. EE facilitates communication among team members, when working on CRs and Tickets, by enabling changes to both the assignee and the state of the CR or Ticket. It also provides queries and status reports for BIPs, CRs and Tickets.

EE tracks the progression of the BIP, CR, and Ticket. This includes current state, date and time of the state change, and the person responsible for the change. To help manage the progress, a 30 day completion timeframe has been established within EE for each state, except development, with a 20 day notification to CM so that an inquiry can be initiated regarding status. The Development state start date, for a CR or Ticket, can be set as desired and adjusted as necessary. Development has a 60 day completion timeframe with a 50 day notification mark to CM. In all states, CM will be notified 10 days prior to the end of the timeframe if the state has not already been advanced.

For CRs and Tickets, a state change notification functionally has also been established in EE to facilitate the hand–off of responsibility from one assignee to the next and to aid in the process flow. It also enables CM to review the CR, or Ticket at key times in the process for clarity and completeness with respect to supporting attachments, or before moving to the end state, Cancel or Complete.

DKO provides several capabilities in support of CM. It serves as an external location for the creation of feedback tickets regarding architecture issues which can then be reviewed and processed by the CM Team. Additionally, DKO provides the space for the CM Library, the capability to manage user access, and document version control.

2.5.2. CM Tracking Tool

The BEA team uses EE as the tool of choice for change control. EE, using an Oracle database, automates the capture, management and communication of issues across development and business project teams. The tool also provides status accounting for BIPs, CRs, and Tickets and allows reports to be generated to assist in the management of all three of these CM mechanisms.

2.5.3. Library – Repository

DKO is used as a CM tool by the CM Team to handle traditional CM tasks of version control and archiving. DKO is used within the A&IM Division as the automated tool to store and control non-architecture version controlled CIs on the project in the form of the CM Library. System Configuration Management actions are captured in sufficient detail so that the content and status of each item is known and previous versions may be recovered. Current status and history (i.e., changes and other actions) of each configuration item are maintained.

Libraries are protected from any unauthorized updates through DKO. Anyone who attempts to modify a CI outside of DKO will modify the timestamp in the encrypted metadata and corrupt the CI. The original CI will have to be retrieved from backups.

In addition, documents which use to be stored as part of the OSD.mil website, on the website, are now maintained on DKO in the same manner as the CM Library. These documents; (e.g. docs, *.pdfs*, and *.xls*) are now linked back into the OSD.mil website to provide controlled accessibility. Individuals using the website who do not have a DKO account will not be able to view to these documents.

Government personnel can apply directly for a DKO account at the website www.us.army.mil. Contractor personnel require a Government sponsor to obtain an account.

2.6. Document Management

2.6.1. Document Control

CM has primary responsibility for the configuration control of BEA deliverable documents which include the APG, BDM, and CMD, as well as BEA processes and procedures, audit and metrics reports, and CM Training materials. Where necessary they are version controlled and managed for checkout and added as updated versions to the library. The Configuration Management Doc Library subfolder is located on the DKO enterprise portal.

Access to the DKO portal is restricted to authorized personnel with an approved government account. In addition, individuals are further given access to the CM Library as needed. The checking out and adding of material to the subfolders must be coordinated with the CM Team.

2.6.2. Document Development and Review

To produce quality documentation, a well-defined and executed approach must be followed. This begins with a schedule detailing the timeframe for each activity which is made available to those in the various roles. It also needs to be initiated sufficiently in advance of the desired deliver date, coordinated with appropriate input providers early and moved efficiently through the reviews to preclude the receipt of late input. Although reviews are important, cycling through reviews multiple times is inefficient and should, if at all possible, be avoided.

The Document Development process is shown in Figure 2-1.

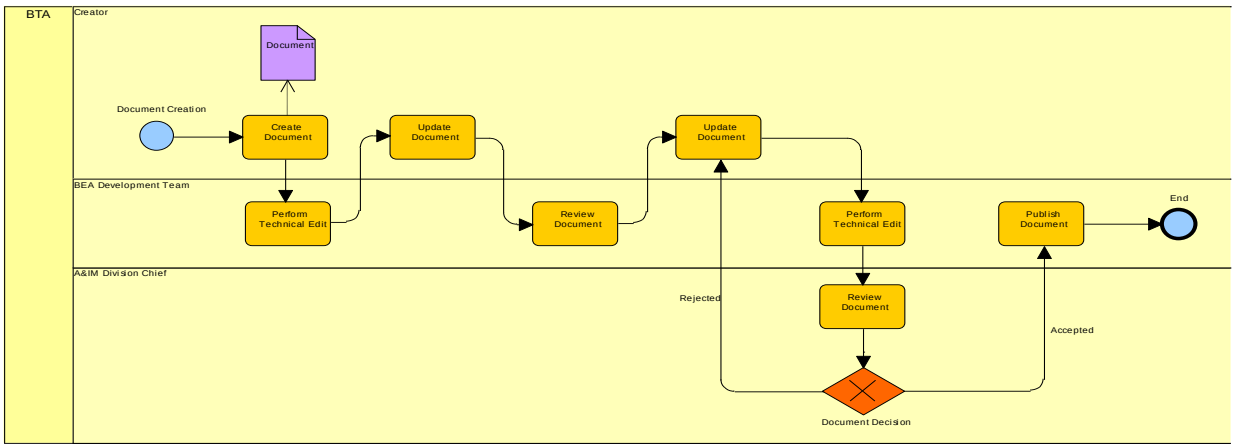

Figure 2-1, Document Development Process

There are three roles involved in the Document Development process; Creator, BEA Development Branch, and TI&E Directorate Chief. Five unique processes comprise the overall Document Development process and are reflected by the named yellow rectangular areas in Figure 2-1. One of these processes has a decision point prior to being able to move forward to the next process. The processes Perform Technical Edit, Update Document, and Review Document are performed twice, once after the initial document creation, and second after the first document review is conducted which is why eight total processes occur.

1. Create Document – The individual assigned the task of managing the creation and/or updating of the document, the Creator, works the document content based upon past experience with the document, coordinated input from TI&E team members, and understanding of changes to processes and methodology. Content is the most important consideration at the time and not specifics on format and grammatical correctness which are addressed to the best of the creator's ability. Once the document is sufficiently developed it is provided to the Technical Writer.
2. Perform Technical Edit – This is the first technical edit. The Technical Writer reviews the document based upon defined DCMO technical document format. Changes are made to bring the document in line with the format and good grammatical construction to include; e.g. Table of Content, Acronym List, spelling, and sentence structure. The document is coordinated with the Creator as needed and returned when completed.
3. Update Document – This is the first document update. The Creator makes additional adjustments, as needed, to the document in preparation for the review. The appropriate document reviewers are determined prior to distribution and may include Architects, Development Leads, and Stakeholders. The Creator provides the document for review.
4. Review Document – This is the first document review. Designated individuals review the document from their perspective capturing comments and suggestions. The review is as comprehensive as possible, dealing with the content of the document, and needs to be completed within the scheduled time. The feedback is normally provided as email input back to the Creator.
5. Update Document – This is the second document update. The Creator takes the feedback and reviews it as a total package for both understanding and to resolve issues and conflicting comments. Comment submitters are contacted as needed. The document is modified according to the feedback provided. However, judgment must be used in coordination with the BEA staff regarding changes. Not all feedback will necessarily be incorporated. Once the updating is completed it is provided to the Technical Writer for rechecking.
6. Perform Technical Edit – This is the second technical edit. The Technical Writer performs a second review of the document with the incorporated changes. The same review approach is used as previously to resolve format, grammar, and other issues. The completed document is returned to the Creator.
7. Review Document – This is the second document review. This is a higher level review performed by the TI&E Directorate Chief and Chief Technical Architect to obtain approval for publication, delivery and incorporation onto the BEA Website. If modifications are needed the document is returned to the Creator for resolution and then the Technical Writer as needed. A final review by the TIE& Directorate Chief may be needed or the document could be releasable once the changes are made.

8. Publish Document – The completed document is handled in several possible ways. If it is only a BEA Website update, it is provided to the BEA Delivery Team for incorporation on the Website. More formal contract deliverables are routed through the Contracting Officer Representative for official delivery and then incorporation on the Website. Both Word and *.pdf* versions of the official deliverables are placed into the CM Library on DKO.

2.7. Configuration Status Accounting

Configuration Status Accounting (CSA) is the recording and reporting of the status of CIs, CRs and Tickets. CSA is performed on the encyclopedia and all encyclopedia-related products by the Service Delivery Team.

CR/Ticket status is monitored by the CM Team to ensure that all planned content for a release will be completed in time for the scheduled delivery of the BEA.

The BEA Architects and the CM Team are responsible for maintaining status information in EE for each CR and Ticket. CR/Ticket status is available in EE and is also summarized and made available twice weekly on Monday and Thursday through a link to the report in the CM Library. Figure 2-2 is an example of the CR Status Report.

CR ID	CR Title	Release	State	CR Create Date	State Start Date	Days in State	CR Longevity	Assignee
CR-1381	IE Visualization Enhancement	BEA 8.0	Development	25-Nov-2009	7-Dec-2009	428	440	Amr Sabet
CR-1804	Displaying SA SV-11 as DIV-3 on BEA web site	BEA 8.0	Walkthrough	28-Oct-2010	13-Jan-2011	26	103	Bill Irwin
CR-1821	Displaying Metrics in BEA HTML	BEA 7.2	Walkthrough	10-Nov-2010	21-Dec-2010	49	90	Mikael Brhane
CR-1861	Term Hyperlinks	BEA 8.0	Analysis	16-Nov-2010	16-Nov-2010	84	84	Amr Sabet
CR-1901	LRP and Control ICOM Updates	BEA 8.0	Development	23-Nov-2010	10-Jan-2011	29	77	Amr Sabet
CR-1943	8.0 Release Content Cleanup	BEA 8.0	Development	22-Dec-2010	23-Dec-2010	47	48	Phan Vuong
CR-1962	Material Weakness Visualization Requirements	BEA 8.0	Development	6-Jan-2011	10-Jan-2011	29	33	Amr Sabet

Figure 2-2, Example CR Status Report

2.8. Process and Procedure Audits

As processes and procedures are executed they need to be monitored for compliance. Initially these audits should occur every time a process or procedure is executed to help gain a solid perspective on how well they are done. Standardized checklists, developed from the approved processes and procedures, enable the collection of standard input from audit to audit. It also permits the tracking of problem reduction from audit to audit and the reduction of risk. Feedback from the audits is provided to the key process players to improve the total process through process modification and awareness as well as modification of the audit process itself and the checklists used for documentation purposes.

Architecture development workshops, centered on approved prioritized BIPs are monitored on a recurring basis to ensure execution according to the workshop procedure. The Workshop Audit Checklist serves as the mechanism for executing these audits and is located in the CM Library on DKO and is in Appendix A: References. Feedback from these audits is verbally provided to the Workshop Coordinator directly after the Workshop and normally in writing within 2 days. Lessons Learned input on workshops is coordinated during the Lessons Learned effort. Audit and Lessons Learned input can be added to the checklist to assist the ongoing monitoring.

The execution of the Link Validation Software Procedure and Printable Diagram Creation and Verification Procedure by the Delivery and CM teams, for both the Informational and Full Releases, are similarly monitored by the CM Team for compliance as they are executed. Feedback from these audits also aid in their improvement and modification as needed.

In the future, as additional procedures are implemented they will be brought under the same compliance monitoring.

2.9. Configuration Audits and Reviews

The objective of Configuration Audits and Reviews is to verify adherence to this *Configuration Management Document* and verify the integrity of a product. The types of audits are Configuration Audits and Physical Configuration Audits. CM Audit findings are documented on the TI&E CM Audit Checklist (see Appendix D).

2.9.1. Configuration Audits

CM Process Audits are performed by the CM Team at random intervals. Audit findings are documented and communicated to management and personnel following CM processes and procedures. The CM Team audits the following to confirm documented procedures are followed:

- Change Request and Ticket Audits: The CM Team conducts audits of the CR and Ticket outputs to determine compliance with the *Configuration Management Document*.
  - Audit(s) of random samplings of CRs at various stages of the process.
  - Routine audit(s) of EE CRs and Tickets are performed to verify that appropriate process related fields are properly populated.
  - Internal Inventory Audit(s) of CR documentation packages.

  - Monitor status of active CRs and Tickets

- Process Audits – Monthly random audits of personnel compliance with CM processes and procedures. The CM Team uses the TI&E CM Audit Checklist at Appendix D.
- Data Collection – The CM Team audits files and folders in the CM Library.
- Monitors the versioning of updated non-architecture deliverables and their timely delivery.
- CM Audits of the SA tool, its databases, and network applications are not under the control of the CM Team.

2.9.2. Physical Configuration Audits

The Physical Configuration Audit (PCA) is executed just prior to the formal delivery of the BEA architecture to the government. It verifies that all necessary encyclopedia(s), documents, presentations, HTML, and other required files are on the physical media. The PCA also verifies that the required deliverable files match the CD directory structure and CRs for the current release are approved and closed.

2.10. Risk Management

Configuration Management is a project control activity that is designed for control and over sight into development activities and not into other project management control activities, including quality assurance. The results of configuration management activities can provide project management and quality assurance with information that help identify risk related to schedule and process. Processes and procedures lay down the approach and the way activities are to be performed for initial implementation to establish a baseline and for ongoing maintenance work. Failure to follow the configuration management process and procedures results in risk in understanding customer's needs, establish a baseline, use of proper baseline, implying all requirements will be met, failure to version control draft work products, failure to baseline results, failure to track changes and report status to management.

Configuration Management and quality assurance activities work in parallel. Configuration Management provides the tools and work products for the activity, while quality assurance verifies and validates work done meets requirements and follows correct processes before the work products are rebaselined. While it is often overstated, attention to detail and process is critical to success and is particularly important with short development schedules and in lean resource environments. The tendency to want to "fix it later" is not a viable approach. Well defined requirements need to be worked in a systemic fashion. Independent oversight of the processes and procedures helps to enforce their complete execution and reduce the introduction of errors. To aid this oversight effort, and reduce risk, information is collected, by CM, from audits of the processes and procedures executed, coordinated with the process owner, and updated processes and procedures created.

2.11. Metrics and Lessons Learned

Metrics, derived from accumulated counts of specific predetermined data, serves as a way to measure how well or how poorly activities are performed. Key questions are routinely in play. Are the errors being detected increasing or decreasing as we move through the development cycle? Are they minor or significant in nature? Are the same types of errors reoccurring? Are we learning from past mistakes? Are CRs and Tickets being processed and worked in a timely manner according to established timeframes? Logging the issues found,

performing timely reviews and analysis, and determining root causes to prevent future occurrences is essential. Additionally, as information is collected, the types of data collected will be modified to assist in further refining the processes.

After the delivery of a release, Lessons Learned input is collected. If it is an Informational Release, the input is collected only from within the TI&E staff. For the major releases, it is also collected from the outside user community. A Lessons Learned template is made available so all input can be directly entered into a common spreadsheet format. This will limit the entry of repeat issues and simplify the input for review by CM. CM then coordinates with the submitters as needed and schedules a work session to create common items for discussion, the assignment of Points-of-Contact on issues and a resolution approach. Resolution will be tracked and to the extent possible accomplished at the lowest organization level.

3. Configuration Management Mechanisms

3.1. Change Management Mechanisms

Changes to the BEA are managed through three mechanisms within the EE tool. These are the BIP, CR, and Ticket. Changes to the EE tool are managed through the use of tickets. Additionally, Feedback tickets are created on the DKO web portal and document development and review have their own processes. Each of these is discussed in the following sections.

3.2. BEA Improvement Proposal Process

The BIP is the requirements capture mechanism, developed by the Stakeholders, in a DKO template, in coordination with the BEA Architects, to document needed architecture changes in the EE tool. It is the basic document for the Stakeholders and Architects to capture a general description of the changes to be requested, the Level of Effort (LOE) required, the priority of the work, and the architecture products affected. The BIP also documents the IRB's approval which in turn gives the BEA permission to develop CRs for the specific work to be done. The roles involved, the possible states held, and the applicable business rules are defined in the BEA CM Requirement Document Implementation which is located in the Requirements folder, in the Configuration Management Document (Doc) Library subfolder located on the DKO web portal.

The BIP process is documented in Figure 3-1 below.

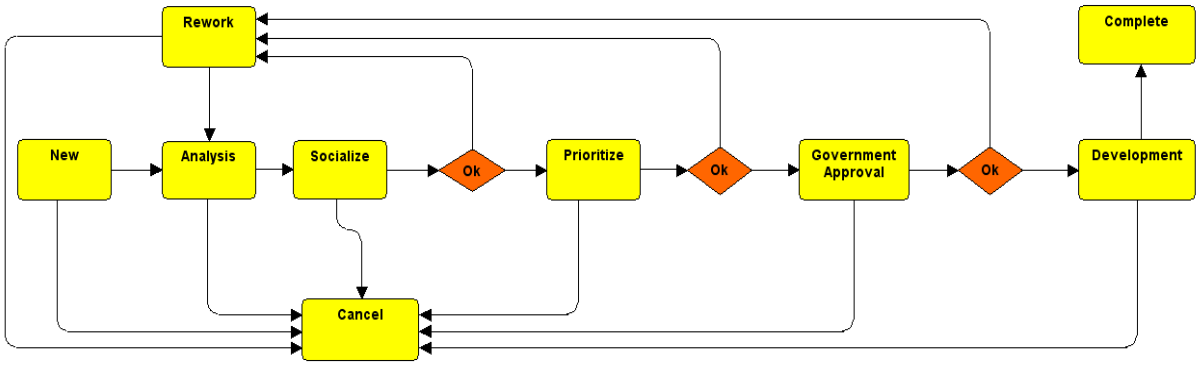

Figure 3-1, BIP Process Flow Diagram

There are four roles involved in the BIP process; IRB, Stakeholder, Architect, and Configuration Management. Nine processes comprise the overall BIP process and are reflected by the named yellow rectangular areas in Figure 4-1. Several of these processes have decision points prior to being able to move forward to the next process.

1) New – During this process, new BIPs are written by the stakeholder community or based upon feedback obtained from later processes, modified to address shortcomings or other issues. During this process a decision may be made by the functional community to cancel the BIP.

New BIPs can be cancelled in EE by the CM, if necessary. Otherwise the BIP is advanced, with an Architect (Assignee) to the "Analysis" state.

2) Analysis – BIPs advanced to Analysis are evaluated by the BEA Development and Delivery Teams, in particular an Architect, in several contexts. The BIP is analyzed based on DoD policies, BEA content relevant to the BIP, and impact the BIP will have on the BEA. The analysis is documented in the BIP along with the LOE required. During this process a decision can be made to cancel the BIP or advance it to the Socialize process. If a decision is made to cancel the BIP at this point, CM performs that action in EE. Otherwise the Assignee advances the BIP to the "Socialize" state.

3) Socialize – This process is executed by the stakeholder community. The stakeholder for the BIP coordinates with the other stakeholders on the analysis performed and the BIP in general on whether to proceed with this change. Based on the coordination effort, a decision can be made to cancel the BIP or advance it to the Prioritize process. If a decision is made to cancel the BIP at this point, CM performs that action in EE. Otherwise the Assignee advances the BIP to the "Prioritize" state.

4) Prioritize – This process is also executed by the stakeholder community. The stakeholder for the BIP, in conjunction with the other stakeholders, reviews the BIPs that have been socialized and prioritizes them into a development hierarchy in preparation for presentation to the IRB Chairs. With the prioritization completed a decision may still be made to cancel a BIP or advance it to the Government Review process. If a decision is made to cancel the BIP at this point, CM performs that action in EE. Otherwise the Assignee advances the BIP to the "Government Review" state.

5) Government Review – The prioritized BIPs are briefed on a high level by the TI&E to the IRB when in this process. Level of effort and priority regarding release inclusion are discussed. The board evaluates the BIPs and performs their own prioritization considering the input provided from the stakeholders and TI&E. During this process a decision (Vote) can be made to cancel one or more of the BIPs or advance them to the Development process. If a decision is made to cancel the BIP at this point, CM performs that action in EE. Otherwise the Assignee advances the BIP to the "Development" state.

6) Development – This process is executed by the BEA Development and Delivery Teams on BIPs which have been approved by the IRB. The BIPs are allocated into an informational or main release based on priority and resources. Subsequently, CRs are produced based upon the analysis previously performed to capture the specific work to be done. Even at this point in the BIP process, BIPs can still be cancelled and removed from development. If a decision is made to cancel the BIP at this point, CM performs that action in EE. Otherwise the BIP stays in Development until after the Reviews and assigned CR work is completed.

7) Complete – This process is executed after the BIP Development process is completed and normally after the Stakeholder, CIO, and DBSMC reviews are completed. The BIP is reviewed based upon the associated CRs which have been completed. If the decision is made that all requirements have been addressed, CM is notified by the Architect and then sets the BIP state to Complete. If it is determined that work remains to be completed in the Scope of the BIP, the BIP will remain open. Additional CRs can then be created to address this work. The BIP will remain in the Development state until CRs are complete.

8) Rework – After three decision points in the overall process, Socialize, Prioritize, or Government Approval, a BIP may need to be modified (Reworked) to meet the Stakeholder's objectives. When this happens, it is subsequently analyzed again and moves back through the process. If a decision is made to cancel the BIP at this point, CM performs that action.

9) Cancel – The Cancel process may be executed from any other process except the Complete process. The BIP can only be cancelled by the creating Stakeholder when it is in a new BIP. BIPs in any other BIP process state can be set to Cancel by the CM Team. All cancellations require a note to be entered explaining the cancellation decision.

While the above reflects the total BIP process, within EE there are only four BIP states that a BIP can hold after it is transferred to TI&E: New, Development, Complete, and Cancel. After the BIP has completed Government Review and is approved for "Development", an email is sent to notify CM that a BIP is approved and available. CM reviews the BIP, assigns the BIP to an Architect, and accepts it for transfer from DKO into the EE BIP structure through a schema. It is initially in the "New" state and can be moved to "Development" by CM based upon authorization of the BEA Development Team. The only states it can be moved to from "Development" are "Complete" and "Cancel".

3.3. Change Request Process

Change Requests (CRs) are the mechanism used to request and document approved changes to the BEA as part of the BEA development process. They are the direct result of the requirements as documented in the BIP and are allocated to one or more of the four types of CRs.

- *Content CR – This CR is used to modify or create new architecture content and can include Data Elements, Data Objects, Business Rules, Processes, and diagrams. It also includes modification of names and descriptions of artifacts as well as deletion of architecture content. In general this CR is used for work across the architecture products; e.g. OV-05, OV-06c, OV-02, SV-01, StdV-1, and the End-to-End (E2E) Business Flows.*
- *Cleanup CR – This CR is used to address modifications and corrections to the architecture that need to be done after other types of CR work are completed. This can include corrections required after the Content and Visualization CRs are completed.*
- *Visualization CR – This CR captures required work and changes to the BEA Website to include linkages, report additions and modifications, and the look and feel of the web pages. Visualization CRs do not go through the BEA Review process.*
- *Metamodel CR – This CR documents the requirements for changes within the architecture tool itself and may include adding new object types or establishing new relationships between objects. Because they directly modify structure and/or relationships in the encyclopedia, this CR type is normally created, approved and moved to Development before the other CR types are created under the scope of a BIP. Metamodel CRs do not go through the BEA Review process.*

The roles involved, the possible states held, and the applicable business rules are defined in the BEA CM Requirements Document Implementation. The CR state changes are documented in Figure 3-2.

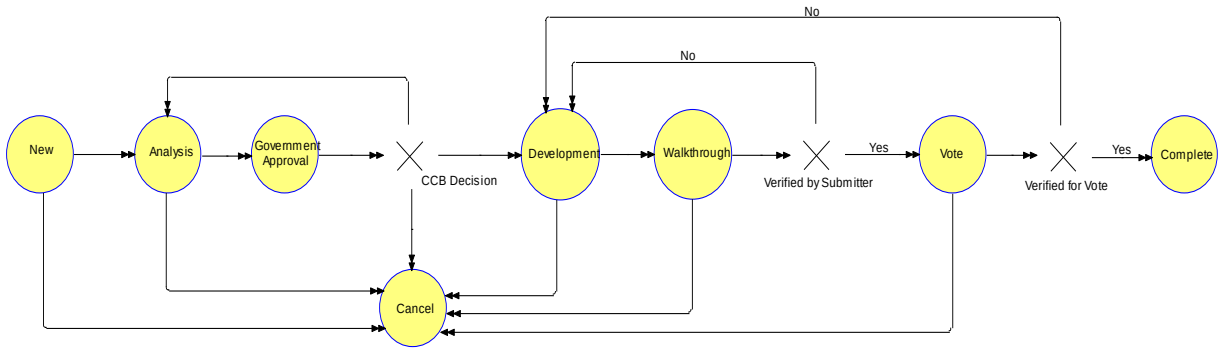

Figure 3-2, CR State Change Flow Diagram

3.3.1. CR Process Descriptions

There are three roles involved in the CR process; Architect (Submitter), Architect (Assignee), and Configuration Management. Eight processes comprise the CR process flow and are reflected by the named yellow circles in Figure 3-2.

CRs are nominally managed by time limits for the three principal states. CRs in the "new" state should not exceed 30 days, CRs in the "Analysis" state should not exceed 60 days and CRs in "Development" should not exceed 90 days. In addition, new CRs are only created after the BIP is approved by the IRB and Development team has given concurrence.

1) New – During this process new CRs are written, normally by a BEA architect based on a BIP, from feedback obtained from later processes, and possibly from input received from the Input Template on DKO. The Template will be discussed in section 3.5. During this process a decision may be made between the functional community and the BEA staff to cancel the new CR. New CRs can be cancelled directly by the Submitter. Otherwise the CR is advanced to the Analysis Process by the Assignee.
2) Analysis – CRs advanced to Analysis are evaluated by an Assignee to determine specific modifications which need to be made to the BEA. The analysis is documented in the CR, with attachments as needed, along with the estimated LOE required and an expected development start date. During this process, a decision can be made to cancel the CR or advance it to the Government Approval process. If a decision is made to cancel the CR at this point, it is done by CM. Otherwise the CR is advanced to the Government Approval Process by the Assignee.
3) Government Approval – Unlike the BIP which goes to the IRB, a CR goes before a Configuration Control Board (CCB) for discussion and approval for development, return for additional analysis, or cancellation. If a decision is made to cancel the CR at this point, it is done by CM; if further analysis is needed the state is reset to Analysis which keeps it with the Assignee. If the CCB approves it for development, CM ensures there is a start date set and then moves it to Development state.
4) Development – In this process the actual modification work to the BEA architecture or website is accomplished. All but the Metamodel CRs are worked within the Workshop sessions directly with the Stakeholders. Development artifacts are attached to the CR as deemed necessary. During this process, a decision can be made to cancel the CR. That decision is a group decision but driven by the Stakeholder with responsibility for the CR. If a decision is made to cancel the

CR at this point, it is done by CM. CRs where the work is considered complete are scheduled for the Walkthrough process and the CR state set to Walkthrough by the Assignee.

5) Walkthrough – This process applies to all CRs except Metamodel CRs. During this process the responsible Architect conducts a briefing (walkthrough) of the changes introduced into the BEA as a result of the CR. If modifications are needed they can be accomplished directly through the Development process. During this process, a decision can be made to cancel the CR. That decision is a group decision but driven by the Stakeholder with responsibility for the CR. If a decision is made to cancel the CR at this point, it is done by CM. The Content and Cleanup CRs that have completed Walkthrough are ready for BEA Review if they are determined to have impact upon the E2E Business Flows. Otherwise the state is set to BEA Review, saved, and then set to Vote in anticipation of the stakeholder vote. The CR states are set by the Assignee.

6) Vote – Upon completion of the Walkthroughs, the CRs and their artifacts are made available for formal Government approval through a vote. Additional artifacts are attached to the CR based upon what is uploaded in the "Virtual Folder" for voting; e.g., Compare reports and checklists. CRs can be voted as "Concur", "Concur with Comment", or "Non-Concur" by the voting members. Comments on content can become Cleanup CRs. Visualization and HTML issues could be turned into tickets. Non-Concurrences must be resolved which could cause the CR to be returned to Development. The recording of the voting results and the attachment of the voting artifacts are done by CM. During this process, it is still possible for a decision to be made to cancel the CR. That decision is a group decision but driven by the Stakeholder with responsibility for the CR. If a decision is made to cancel the CR at this point, it is done by CM. If there are no outstanding issues, CM is notified that the CR is considered ready for completion.

7) Complete – This process is executed after the Vote process is completed. CM is notified by the Assignee that the vote is completed and cleanup CRs and/or Tickets have been created. CM checks the CR for the attachment of the appropriate artifacts in EE and then sets the CR state to Complete. At this point no additional material can be attached to the CR.

8) Cancel – The Cancel process may be executed during any other process except the "Complete" state. The CR can only be cancelled by the Architect (Submitter) when it is a new CR. CRs in any other state must be set to Cancel by the CM team. A note explaining the reason for cancelling is needed.

3.3.2. CR Notification Flow

There are three roles involved in the CR notification flow; Architect (Submitter), Architect (Assignee), and CM. For CM to monitor the movement of a CR from creation through completion and for participants to receive notification that a CR is actionable, emails are sent by EE. In some cases the addressee is preset while others are chosen from a selection list.

The following notification sequence, Figure 3-3, represents the normal path for the movement of a CR. CRs can be moved "backward"; e.g. from Walkthrough to Analysis to enable modifications and then forward again for review.

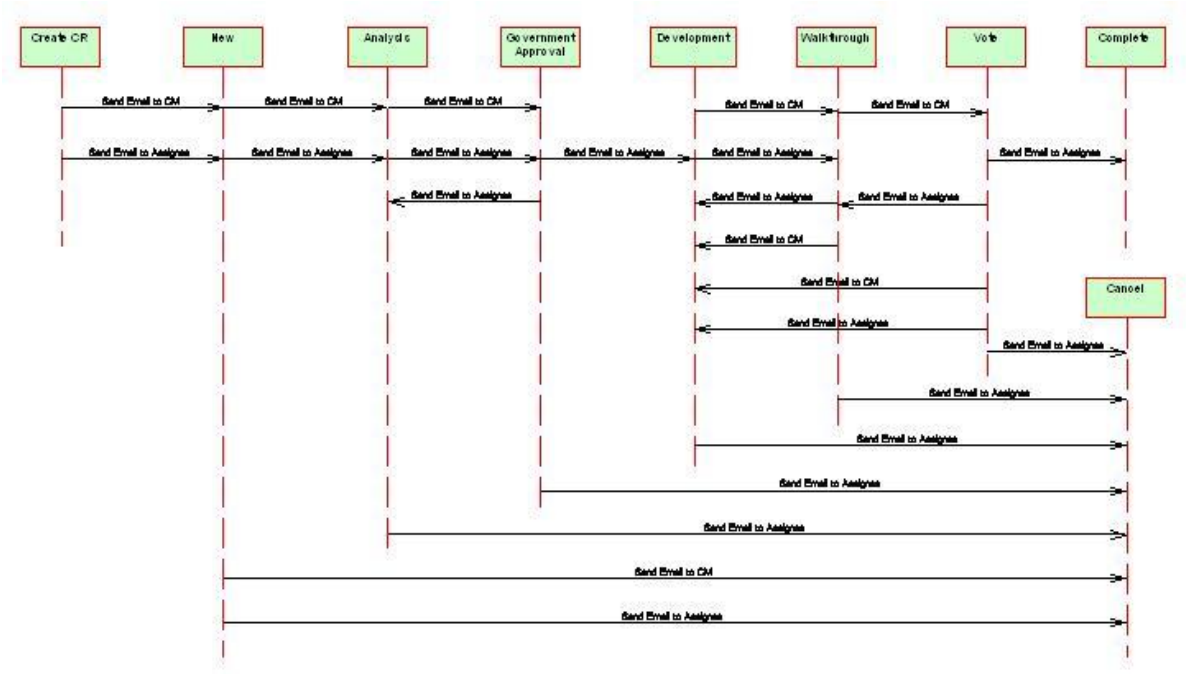

Figure 3-3, CR Notification Event/Trace Diagram

1) Create CR - CRs are principally written by the A&IM staff, normally an Architect. There are four types, as discussed previously, of which the Metamodel and Visualization do not go through BEA Review. While the CR is being developed no notifications are sent. The Architect (Submitter) cannot assign the CR to an Architect (Assignee) at this time. When the CR is finished being written, the Submitter selects the Submit option on the CR which sends an email to the CM team that a new CR is now available for BEA Analysis. CM conducts a general review of the CR.
2) New Notification – The CM team selects an Architect, normally the Development Team Lead, from a selection list as the Assignee. When saved this triggers an email to the Assignee that the CR is ready for analysis. At this time the Architect (Submitter) can also be designated as the Architect (Assignee) if it is deemed appropriate.

3) Analysis Notification – Upon receipt, the Architect (Assignee) when ready, changes the CR state to Analysis. When saved, this triggers an email to the CM team indicating analysis has begun on the CR. If the Architect (Assignee) reassigns the CR, notifications are also sent.

4) Government Approval Notification – When the CR has completed Analysis and is ready for Government Approval (CCB), the Architect (Assignee) changes the state to Government Review. An email is triggered notifying the CM team so it can be put on the CCB agenda.

5) Development Notification – After the CR has been approved by the CCB, the CM team sets the state to Development, and saves. An email is triggered notifying the Architect that development on the CR can proceed.

6) Walkthrough Notification – Upon completion of CR development, the Architect (Assignee) sets the CR state to Walkthrough indicating readiness for the Stakeholders to review all work accomplished to complete the CR.

7) Vote Notification – After Walkthrough is completed, the Architect (Assignee) sets the Metamodel and Visualization CRs to the Vote state. Content and Cleanup CRs are moved to Vote after BEA Review is completed. This notifies the CM team that the final approval of a CR is forthcoming.

8) Complete Notification – After the voting is completed and the CR is concurred with, the CM team, after conducting a final check of the CR for completeness, sets the CR to Complete. This notification is also sent to the CR Submitter.

9) Cancel Notification – At any time in the CR process, a CR can be set to Cancel. The assignee can only do this in the New state. When this done both the assignee and CM are notified. CM can set to Cancel from any state. When this done the assignee is notified.

3.4. Ticket Process

Tickets provide a mechanism for capturing identified errors in the website that need correction, along with suggestions for improvement which come from both internal and external organizational member's comments. In addition, Tickets are also the mechanism for requesting new or modifications to the existing BEA Reporting Service (BRS) reports which are used by Architects to identify modeling inconsistencies within the BEA. Prior to creating a ticket, the Submitter needs to coordinate with relevant parties for possible impacts and to determine whether the Ticket is a duplicate of an existing Ticket and if a ticket should be created.

The roles involved, the possible states held, and the applicable business rules are defined in the BEA CM Requirements Document for BEA Management System. The Ticket state change is documented in Figure 3-4.

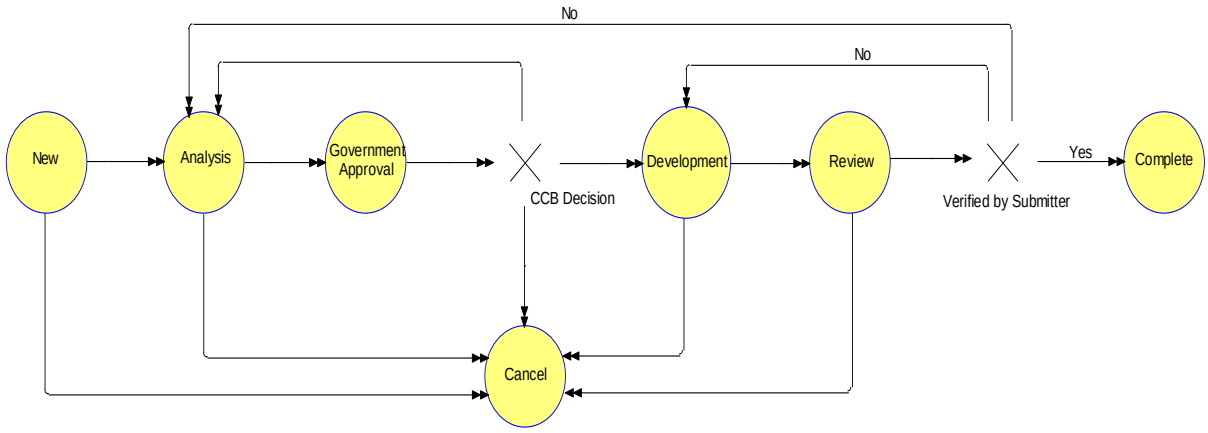

Figure 3-4, Ticket Process State Change Diagram

3.4.1. Ticket Process Descriptions

There are four roles involved in the Ticket process; Ticket Submitter, Government Reviewer, Architect, and Configuration Management. Seven processes comprise the Ticket process and are reflected by the named yellow colored areas as reflected in Figure 3-4 above. These, in turn have one or more sub-process and decision points.

1) New – During this process new Tickets are written. Tickets can be indirectly created by input from the functional community through the Input Template on DKO, which is discussed in section 3.5, or directly by the BEA staff in EE. During this process, a decision may be made between the functional community and BEA staff to cancel a new Ticket. New Tickets, once created in EE, can be cancelled directly by the Architect (Submitter). Otherwise the Ticket state is advanced to Analysis.

2) Analysis – Tickets advanced to Analysis are evaluated by an Architect (Assignee) to determine specific modifications which need to be made to the BEA to address the Ticket issue. An existing Ticket can also be returned to Analysis if during Government Review or Review (done by the Submitter) it is determined that the work planned or done does not satisfy the ticket requirements. The analysis is documented in the Ticket along with the LOE required. During this process, a decision can be made to cancel the Ticket or advance it to the Government Review process for development approval. If a decision is made to cancel the Ticket, it is done by CM.

3) Government Approval – In the same manner as a CR, a Ticket goes before a CCB for discussion and approval for development, return for rework, or cancellation. If a decision is made to cancel the Ticket, it is done by CM; otherwise it is returned to the Architect (Assignee) for rework or moved forward to Development.

4) Development – In this process the actual modification work is accomplished. As opposed to a need for sequencing CRs for work, Tickets are basically addressed in the order received. Exception cases do exist. During this process, a decision can be made to cancel the ticket. That decision is a group decision but driven by the Stakeholder with responsibility for the area being worked. If a decision is made to cancel the Ticket, it is done by CM. Tickets where the work is considered complete are sent to Review.

5) Review – All Tickets are reviewed internally by the Architect (Assignee) and then by the Submitter. After their review, and if considered finished, they are passed to the CM for checking and to ensure that required artifacts are attached. If modifications are needed they can be accomplished by redirecting the Ticket to the Development process, with a note explaining the reason for return. Occasionally it may occur that the solution is not adequate due to changing Ticket requirements and a need for additional analysis. The Ticket can then be returned to the Analysis state and movement back through the system. During this process, a decision can be made to cancel the Ticket. That decision is a group decision but driven by the Stakeholder with responsibility for the area being worked. If a decision is made to cancel the Ticket, it is done by CM.

6) Complete – This process is executed after the Review process is completed. CM receives notification from the Architect (Assignee) that the work is done. CM checks for the attachment of the appropriate artifacts to the Ticket in EE and then sets the Ticket state to Complete.

7) Cancel – The Cancel process may be executed from any other process except the Complete process. The Ticket can only be cancelled by the Architect (Submitter) when it is a new Ticket. Tickets in any other Ticket process must be set to Cancel by the CM team.

3.4.2. Ticket Notification Flow

There are three roles involved in the Ticket notification flow; Architect (Submitter), Architect (Assignee), and CM. For CM to monitor the movement of a Ticket from creation through completion and for participants to receive notification that a Ticket is actionable, emails are sent by EE. In some cases the addressee is preset while others are chosen from a selection list.

The following notification sequence represents the normal path for the movement of a Ticket. Tickets can be moved "backward" e.g. from Review to Analysis and then forward again to enable modifications.

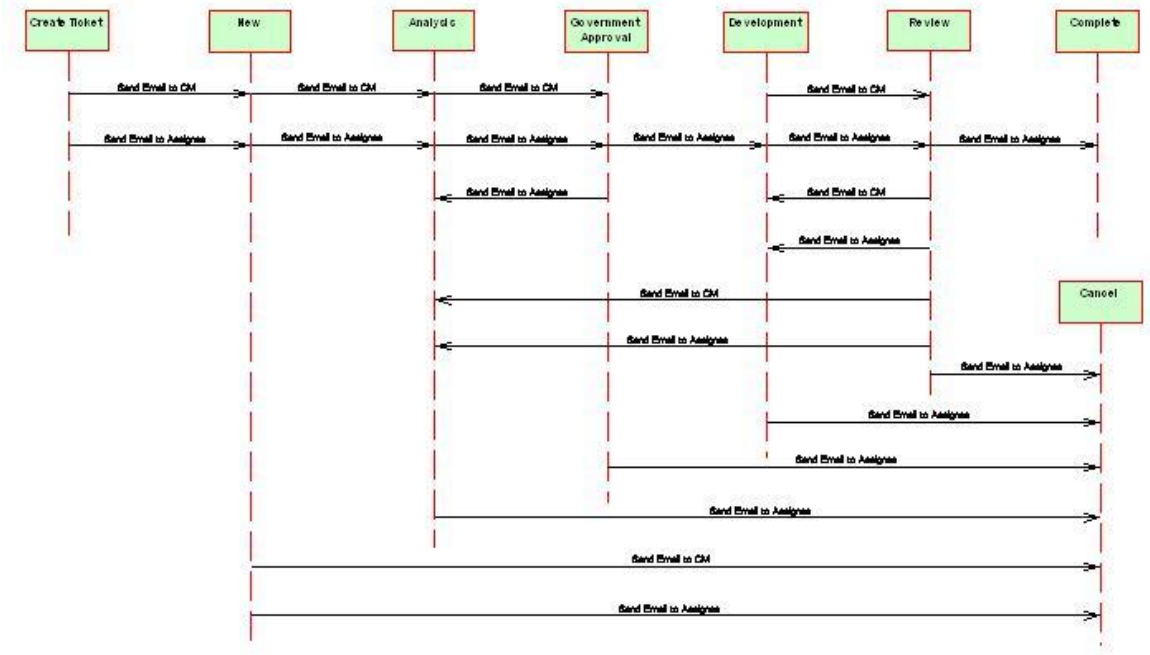

Figure 3-5, Ticket Notification Event/Trace Diagram

1) Create Ticket Notification – While the Ticket is being created and saved in EE, no notification is sent. When the Ticket is finished being written, the Submitter selects the Submit option on the Ticket which sends an email to the CM team that a new ticket is now available for Analysis. If an Architect (Assignee) has been selected notification will be sent to them as well.
2) New Notification – The CM team selects an Architect Assignee, normally the Development Team Lead, from a selection list to be the Assignee. When saved this triggers an email to the Assignee and the CM Team that the Ticket is ready for analysis.
3) Analysis Notification – Upon receipt by the Architect (Assignee), the Ticket state can be changed to Analysis. When saved this triggers an email to the CM team and the Assignee indicating analysis has begun on the Ticket.
4) Government Approval Notification – When the Analysis is completed and the Ticket is ready for Government Review (CCB), the Architect (Assignee) changes the state to Government Review. An email is triggered notifying the CM team so that it can be put on the CCB agenda.
5) Development Notification – After the Ticket has been approved by the CCB, the CM sets the state to Development. An email is triggered notifying the Architect (Assignee) that development on the Ticket can occur.
6) Review Notification – The Architect (Assignee) sets the Ticket state to Review upon completion of the work as it is turned over to another Architect for checking. If required, the Ticket is coordinated with the external submitter for review. This notifies the CM team that the Ticket is under review.
7) Complete Notification – Upon a successful final review by the CM team, the Ticket is put into the Complete state. Both the CM Team and the Architect (Submitter) are notified External BEA Feedback Ticket Input.
8) Cancel Notification – At any time in the Ticket process, a Ticket can be set to Cancel. The assignee can only do this in the New state. When this done both the assignee and CM are notified. CM can set to Cancel from any state. When this done the assignee is notified.

3.5. External BEA Feedback Ticket Input

CRs and Tickets are created directly within EE by an Architect (Submitter). Independent Verification and Validation (IV&V) can also perform the role of a Submitter for Tickets. When someone external to BEA needs to provide input regarding problems or errors discovered during tests and checks performed on the architecture or website, they can do this through the BEA Feedback Ticket format located on DKO. While this is not the direct creation of an EE Ticket it does provide an input method which can lead to the generation of a CR or Ticket. This capability is available to anyone with permission to access the BEA website. The process underlying this activity is illustrated in Figure 3-6.

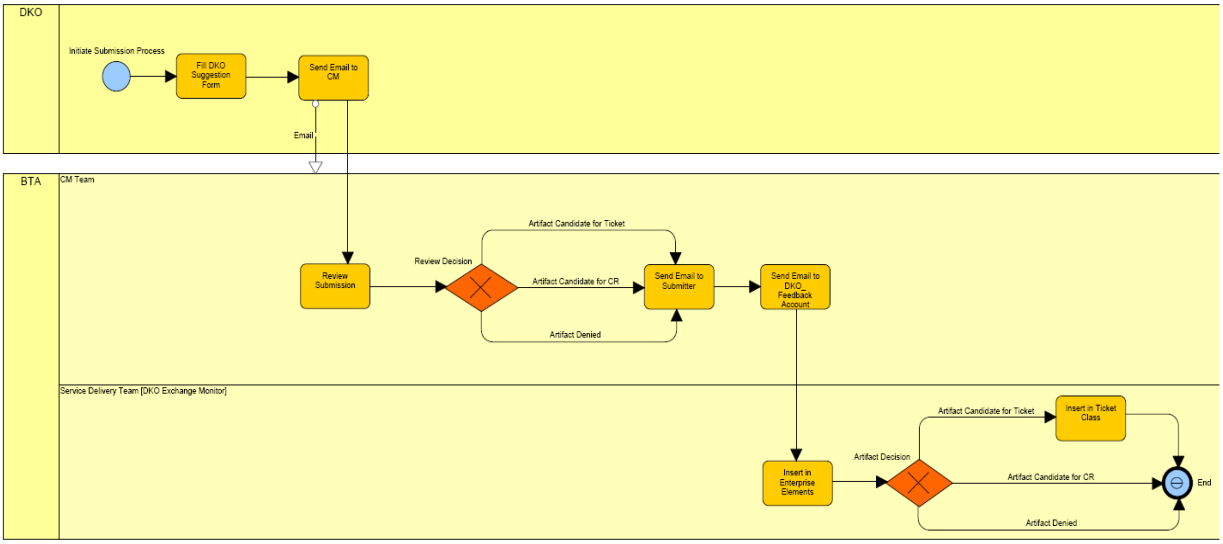

Figure 3-6, BEA Feedback Ticket Process Flow

The following notification sequence represents the normal path for the movement of a Feedback Ticket.

1) Fill DKO Suggestion Form - The Feedback Ticket, as shown in Figure 3-7, requires the Request Title, Feedback Description, Organization, and Phone Number fields to be populated. An adequate description is important to enable both the CM Team and the eventual Architect (Assignee) to quickly isolate the problem for resolution and determine the scope of the work to be done.

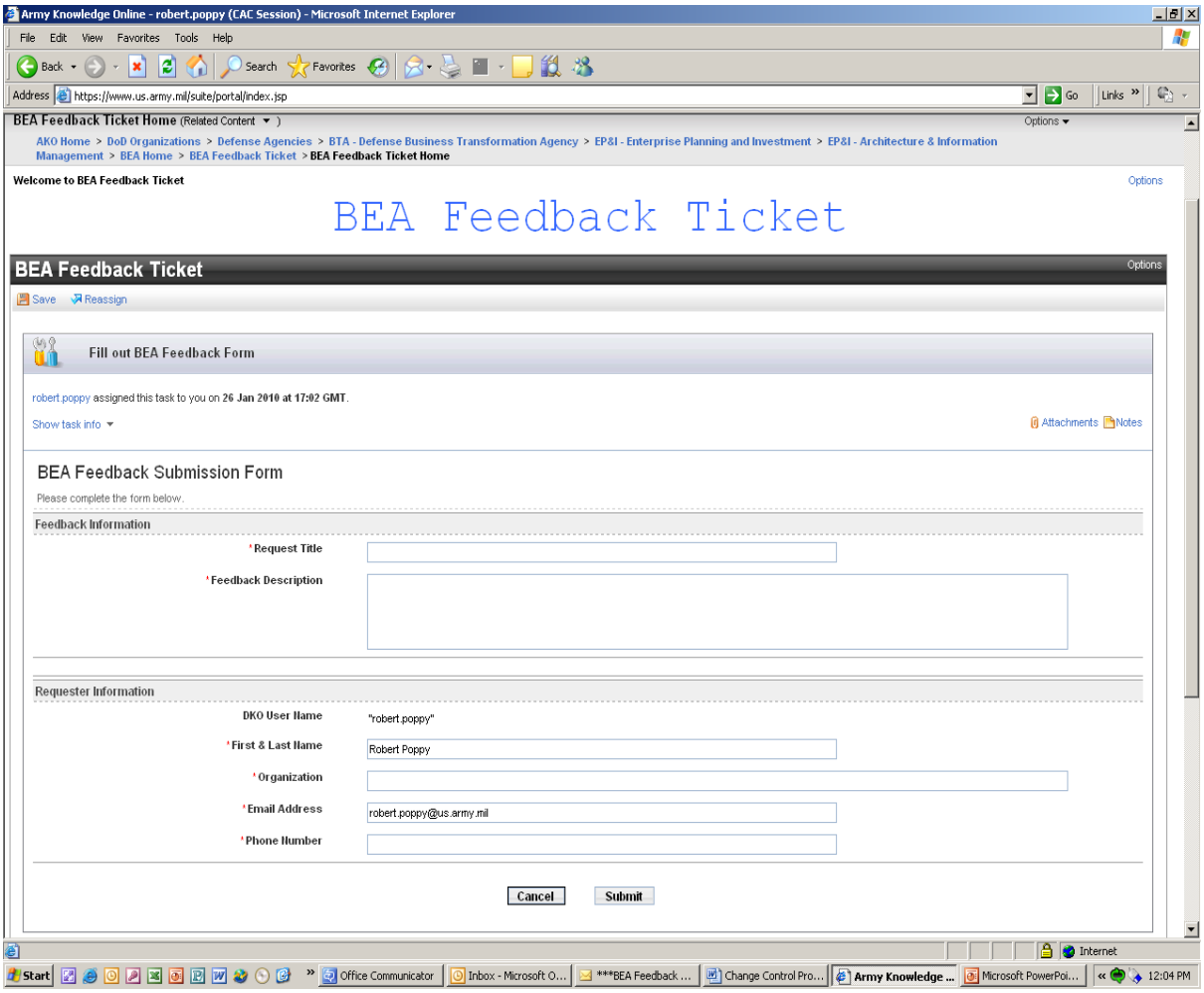

Figure 3-7, BEA Feedback Ticket Template on DKO

2) Send Email to CM – The Feedback Ticket can now be "Submitted" through the generation of an email to the members of the CM team for an initial assessment.

3) Review Submission - The members of the CM Team receive the generated email. One of the CM Team members accepts the task, as shown on Figure 3-8, and conducts a general review of the content to determine if the input is valid, qualifies to be a CR, or qualifies to be a Ticket. If needed, the submitting individual will be contacted for further information.

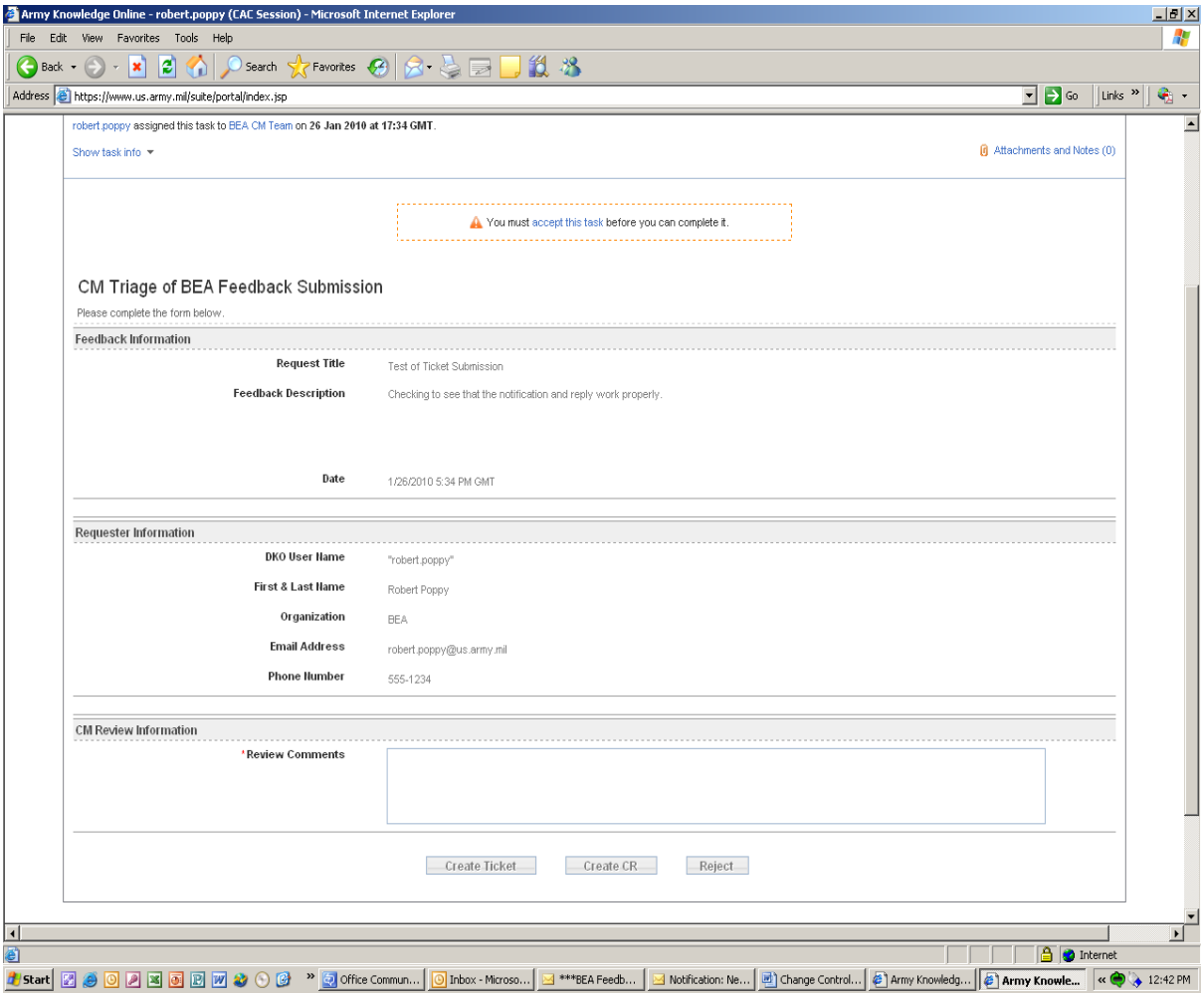

Figure 3-8, Acceptance and CM Triage of BEA Feedback

4) Send email to Submitter - Upon completion of the review, a response is automatically sent to the feedback submitter providing the results of the review.

5) Send Email to DKO Feedback Account – The email response is also forwarded to the DKO Feedback Account which acts as a holding area.

6) Insert in Enterprise Elements – Monitoring functionality captures the emails for placement into EE where they are archived. If the email is a CR candidate, it will be reviewed and manually entered into EE by an assigned Architect (Submitter) in coordination with the external submitter (Sponsor).

7) Insert in Ticket Class – Emails which were marked as a Ticket candidate are auto-populated into the EE Ticket format. From here they are managed as new Tickets under the Ticket process.

4. Training

CM training (orientation) is focused into three areas: CM Responsibilities, Enterprise Elements, and the CM Library,

- CM Responsibilities – Covers areas such as the working of the CCB: BIP, CR and Ticket management; management of Lessons Learned; and management of the DKO folders housing documents linked into the BEA website.

- Enterprise Elements – This training covers the areas of; BIPs, CRs, and Tickets; how they are developed, and the states they pass through. A demonstration of the tool is conducted as part of this training.

- CM Library – Its location on DKO, the major folder areas, how documents are version controlled, and how documents are added to the library and how they can be copied out.

Training will be conducted as part of the BEA Weekly Standup meeting on a quarterly basis based on staff turnover. Individual assistance will be provided to supplement the group training.

Appendix A: References

Title (File Located in the CM Library on DKO, if applicable)	Publication Date
ANSI/IEEE STD 828- 2005 Standard for Software Configuration Management Plans	August 12, 2005
TI&E CM Audit Checklist (Appendix D Configuration Management Document)	March 11, 2011
BEA Workshop Audit Checklist (CM Library>Templates)	June 17, 2009
PWS Deliverable Configuration Item Checklist (Appendix C PWS Deliverable Configuration Item Checklist)	March 5, 2008
Version Control and Naming Standard Procedure v1.0 (CM Library> Methodology>Other Guidance Documents – Plans etc)	April 3, 2006
Physical Configuration Audit (CM Library> Methodology>Other Guidance Documents – Plans etc)	September 19, 2007
Architecture Build Process and Procedures (CM Library> Methodology>Other Guidance Documents – Plans etc)	April 30, 2008
Delivery Process Guide v5.0 (CM Library> Methodology>Other Guidance Documents – Plans etc)	November 30, 2007

Appendix B: CM Glossary

Term	Definition
Architecture Content	Information obtained from the CBM to incorporate into the Architecture. This information can have impacts on one or more of the All View, System View, Operational View, or Technical View Architecture products.
Automated System	A configuration of hardware and software infrastructure, applications, and associated documentation, either custom designed or commercial off-the-shelf (COTS) software, or combination thereof, that automates the activities of collecting and/or accessing data or information and performing logical computations in support of CMs' processes.
Baseline	(1) A specification or product that has been formally reviewed and agreed upon, that thereafter serves as the basis for further development, and that can be changed only through formal change control procedures. (2) A document or a set of such documents formally designated and fixed at a specific time during the lifecycle of a configuration item. (3) Any agreement or result designated and fixed at a given time, from which changes require justification and approval. (IEEE Std. 610-12-1990) A baseline is a configuration identification formally designated and applicable at a specific point in the lifecycle of a configuration item.
Build	An operational version of a system or component that incorporates a specified subset of the capabilities that the final product will provide. (IEEE Std. 610-12-1990)
Bulk Load	The loading of data from a delimited, semi-colon separated, data file into the appropriate architecture locations. This may include the establishing of data relationship within the Architecture.
BEA Improvement Proposal (BIP)	The requirements capture mechanism established by the BEA and its Stakeholders, to document needed architecture changes. This includes a general description of the changes requested, the Level of Effort (LOE) anticipated, the priority of the work, and the architecture products affected. The BIP also documents the approval by the Investment Review Board (IRB) authorizing development to occur.
Capability Maturity Model (CMM)	Developed and maintained by the Software Engineering Institute at Carnegie Mellon University, the CMM is a framework that describes the key elements of an effective software development process arranged into five maturity levels: initial, repeatable, defined, managed, and optimizing.

Term	Definition
Cleanup CR	This CR is used to address modifications and corrections to the architecture that need to be done after other types of CR work are completed. This can include corrections required after the Content and Visualization CR are completed.
Concur	An agreement on the changes made within a particular change request. All changes have been reviewed and approved by a CBM.
Concur with Comments	An agreement on the changes made within a particular change request with comments. All changes have been reviewed and approved by a CBM. If a comment has impact on the changes made, a CBM must vote non-concur.
Configuration Audit	A functional configuration audit is conducted to verify that the development of a configuration item has been completed satisfactorily, that the item has achieved the performance and functional characteristics specified in the functional and allocated configuration identification, and that its operational and support documents are complete and satisfactory. A physical configuration audit is conducted to verify that a configuration item, as built, conforms to the technical documentation that defines it. (IEEE Std. 610-12-1990)
Configuration Control Board (CCB)	A group of people responsible for evaluating and approving or disapproving proposed changes to configuration items, and for ensuring implementation of approved changes. (IEEE Std. 610-12-1990)
Configuration Control	An element of CM, consisting of the evaluation, coordination, approval or disapproval, and implementation of changes to configuration items after formal establishment of their configuration identification. (IEEE Std. 610-12-1990)
Configuration Identification	An element of CM, consisting of selecting the configuration items for a system and recording their functional and physical characteristics in technical documentation. (IEEE Std. 610-12-1990)
Configuration Item	An aggregation of hardware, software, processes, procedures or all, that is designated for configuration management and treated as a single entity in the configuration process. (IEEE Std. 610-12-1990)

Term	Definition
Configuration Management (CM)	A discipline applying technical and administrative direction and surveillance to identify and document the functional and physical characteristics of a configuration item, control changes to those characteristics, record and report change processing and implementation status, and verify compliance with specified requirements. (IEEE Std. 610-12-1990)
Configuration Status Accounting (CSA)	An element of CM, consisting of the recording and reporting of information needed to manage a configuration effectively. This information includes a listing of the approved configuration identification, the status of proposed changes to the configuration, and the implementation status of approved changes. (IEEE Std. 610-12-1990)
Configuration	The functional and physical characteristics of hardware or software as set forth in technical documentation or achieved in a product. (IEEE Std. 610-12-1990)
Content CR	This CR is used to modify or create new architecture content and can include Data Elements, Data Objects, Business Rules, Processes, and diagrams. It also includes modification of names and descriptions of artifacts as well as deletion of architecture content. In general this CR is used for work across architecture products such as the OV-05, OV-06c, OV-07, OV-02, OV-03, and SV-01.
Defense Knowledge Online (DKO)	The Department of Defense (DoD) information sharing environment that supports secure access to disparate, cross-service capabilities and information as an enterprise collaborative environment for warfighting, business, and intelligence users. The focus of Defense Knowledge Online (DKO) is the requirement for a DoD-wide collaborative enterprise. DKO provides a suite of core enterprise services (CES) that improves the ability to collaborate and discover/subscribe to existing information sources.
Functional Configuration Audit (FCA)	A functional configuration audit ensures that the functionality of a configuration item as demonstrated by the test and evaluation effort is the same as that documented in the Development Specification and the Product Specification for that configuration item.
Enterprise Elements	The Elements Repository product is a powerful and innovative technology that can be used by any large organization to manage large quantities of information in accordance with complex processes. It offers the full scalability and flexibility of its Oracle engine, the configurability of a metadata repository, and the process enforcement of a workflow tool.

Term	Definition
GAO Comments	On an annual basis, GAO submits comments and recommendations about the Businesses Enterprise Architecture to the External Government Liaison of the Enterprise Transition Planning Division in the Business Transformation Agency.
Hyper Text Markup Language (HTML)	The predominant markup language for web pages. It provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists etc as well as for links, quotes, and other items.
IT Project	A temporary endeavor undertaken to create a unique information technology product, service, or result (e.g., an automated system).
Lean Six Sigma	Six Sigma is a business management strategy originally developed by Motorola. Six Sigma seeks to improve the quality of process outputs by identifying and removing the causes of defects (errors) and variability in manufacturing and business processes. It uses a set of quality management methods, including statistical methods, and creates a special infrastructure of people within the organization ("Black Belts", "Green Belts", etc.) who are experts in these methods.
Lessons Learned (LL)	Lessons Learned are captured through each informal and formal architecture delivery. For informational releases, the Lessons Learned is only captured internal to the BEA. Lessons Learned from formal deliverable are capture from both internal and external resources.
Metadata CR	This CR documents the requirements for changes within the architecture tool itself and may include adding new object types or establishing new relationships between objects. Because they directly modify structure and/or relationships in the encyclopedia, this type must be created, approved and in development first before the other CR type are created under the scope of a BIP. Metadata CRs do not go through the BEA Review process.
Methodology	(1) a body of methods, rules, and postulates employed by a discipline: a particular procedure or set of procedures (2) the analysis of the principles or procedures of inquiry in a particular field.
Non Concur	Changes made are not agreed upon and not within the context of the CR to a particular CBM. The CBM will not accept the change as it is currently written.

Term	Definition
Physical Audit	A type of configuration management audit. The objective of a physical audit is to provide an independent evaluation of a configuration item (CI). The audit verifies that the CI describes all the changes made to the architecture are I compliance with the CI and ready for delivery.
Product	A physical entity (e.g., a piece of hardware or software) or artifact (e.g., a document) that is created by someone or some process.
Ticket	A Ticket provides a mechanism for capturing identified errors in the architecture or website that need correction, along with suggestions for improvement which come from both internal and external organizational member's comments. They are also used to request new or modifications to existing BEA Reporting Service (BRS) reports which are used by Architects to identify modeling inconsistencies.
Tool Enhancement	A commercial upgrade provided by the vendor to a COTS software product. In addition it can be locally developed software upgrades to provide customized capabilities to meet user requirements.
Use Case	A use case is a description of how users will perform tasks on a Web site. A use case includes two main parts: 1.The steps a user will take to accomplish a particular task on a site 2. The way the site should respond to a user's actions. A use case begins with a user's goal and ends when that goal is fulfilled.
Visualization CR	This CR captures required work and changes to the BEA Website to include linkages, report additions and modifications, and the look and feel of the web pages. Visualization CRs do not go through the BEA Review process.

Appendix C: PWS Deliverable Configuration Item List

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
Task 1		**Architecture Planning**			
	Plan of Action and Milestones	Electronic & Hardcopy	MPP	1	5/1/20XX
	BEA Release Schedule	Electronic & Hardcopy	MPP	1	5/1/20XX
Task 2		**Architecture Development and Maintenance**			
	Overview and Summary (AV-1)	CD	DOC, PDF	1	3/15/20XX
	Integrated Dictionary (AV-2)	CD	HTML,XLS	1	3/15/20XX
	Operational Node Connectivity Description (OV-2)	CD	HTML	1	3/15/20XX
	Operational Information Exchange Matrix (OV-3)	CD	XLS, PDF	1	3/15/20XX
	Operational Activity Model (OV-5)	CD	HTML	1	3/15/20XX
	Operational Node Tree (OV-5)	CD	HTML	1	3/15/20XX
	Operational Rules Model (OV-6a)	CD	HTML	1	3/15/20XX
	Business Process Model (OV-6c)	CD	HTML	1	3/15/20XX
	Logical Data Model (OV-7)	CD	HTML	1	3/15/20XX
	Systems Interface Description (SV-1)	CD	HTML	1	3/15/20XX
	Operational Activity to Systems Function Traceability Matrix (SV-5)	CD	XLS, PDF	1	3/15/20XX
	System Data Exchange Matrix (SV-6)	CD	HTML, XLS	1	3/15/20XX

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
	Technical Standards Profile (TV-1).	CD	HTML	1	3/15/20XX
	SV-TV Bridge	CD	HTML	1	3/15/20XX
	BEA Summary Document	CD	DOC, PDF	1	3/15/20XX
	Frequently Asked Questions (FAQs)	CD	DOC, PDF	1	3/15/20XX
	BEA/ETP Cross-Reference Report	CD	DOC, PDF	1	N/A
	BEA Compare Report	CD	DOC, PDF	1	3/15/20XX
Task 3	**Net-Centric Alignment for BEA Annual Releases**				
	Net-Centric Approach Document	Electronic & Hardcopy	DOC	1	N/A
Task 4	**Architecture Build and Delivery Support**				
	Updated Architecture Verification Processes and Procedures (Draft)	Electronic & Hardcopy	DOC	1	As Needed
	Configuration Management Reports	Enterprise Elements	SQL	As Needed	3/15/20XX
	Technical Modification Specifications	Electronic	DOC	As Needed	As Needed
	Updated Architecture Build Processes and Procedures	Electronic & Hardcopy	DOC	1	4/30/20XX
	System Architect Macros	.NET	Various	As Needed	As Needed
	BEA Reporting Service (BRS) Queries and Reports	Electronic & Hardcopy	Various	As Needed	As Needed
	BEA Thread Tool and Reports	Electronic & Hardcopy	Various	As Needed	As Needed
	Compare Tool and Reports	Electronic & Hardcopy	Various	As Needed	As Needed

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
	Updated Architecture Package and Delivery Processes and Procedures	Electronic & Hardcopy	DOC	1	4/30/20XX
	BEA on CD, BEA Website and other designated government websites	CD	Various	1	3/15/20XX
	HTML version of the BEA	CD	HTML	1	3/15/20XX
Task 5	**Architecture Visualization**				
	Visual representations of the architecture in non-DoDAF formats	Various	Various	As Needed	As Needed
Task 6	**Architecture Methodology Documentation**				
	Updated BEA Development Methodology (BDM)	CD	DOC, PDF	1	4/30/20XX
	Updated Architecture Product Guides (APG)	CD	DOC, PDF	1	4/30/20XX
Task 7	**End-to-End (E2E) Development Process**				
	Updated BEA Development Model process and documentation	CD	HTML	1	As Needed
Task 8	**Configuration Management**				
	Updated BEA Configuration Management Plan				
	Updated BEA Configuration Control Procedures	CD	DOC	1	4/30/20XX
	Documentation of BEA Improvement Proposals (BIPs), Change Requests (CRs) and Tickets	Electronic	SQL	As Needed	As Needed
	Configuration Management Status Report	Electronic	DOC	1	As Needed: Posted to A&IM site on DKO

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
Task 9	**Other Architecture Development and Maintenance Support**				
Task 9.1	Federation Implementation Plan	CD	DOC	1	As Needed
	BEA Quality Assurance Plan	CD	DOC	1	As Needed
	Enterprise Architecture (EA) Status Reports	Electronic	DOC	1	As Needed
Task 9.2	Overview and Summary	CD	DOC,PDF	1	As Needed
	Integrated Dictionary	CD	HTML,XLS	1	As Needed
	Operational Node Connectivity Description	CD	HTML	1	As Needed
	Operational Information Exchange Matrix	CD	XLS, PDF	1	As Needed
	Operational Activity Model	CD	HTML	1	As Needed
	Operational Rules Model	CD	HTML	1	As Needed
	Business Process Model	CD	HTML	1	As Needed
	Logical Data Model	CD	HTML	1	As Needed
	Systems Interface Description	CD	HTML	1	As Needed
	Operational Activity to Systems Function Traceability Matrix	CD	XLS, PDF	1	As Needed
	System Data Exchange Matrix	CD	HTML;XLS	1	As Needed
	Technical Standards Profile	CD	HTML	1	As Needed
Task 10	**Federation Support (This is an Unfunded Requirement)**				
	Updated Federated Architecture Strategy and Roadmap	Electronic & Hardcopy	DOC	1	N/A
Task 11	(DELETE)				

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
Task 12	**Enterprise Transition Plan (ETP) and Congressional Report (CR) Production (This is an Unfunded Requirement)**				
	Enterprise Transition Plan (annually, every Sep 30)	Electronic & Hardcopy	DOC, HTML, PDF	1	N/A
	March Congressional Report (annually, every Mar 15)	Electronic & Hardcopy	DOC; HTML, PDF	1	N/A
Task 13	**Planning and Analysis**				
	Business Capability Gap Analysis Updates-	Electronic & Hardcopy	DOC, PPT, XLS	1	As Needed
	Federation, BEA and SOA approach Analysis Update	Electronic & Hardcopy	DOC	1	N/A
	Business Capability Improvement Report -	Electronic & Hard Copy	DOC, PPT	1	As Needed
	Input to other DoD plans	Electronic & Hardcopy	DOC	1	As Needed
	CR-Updates to the ETP/CR alignment to "Other DoD Plans" section of the ETP/CR	-Electronic & Hardcopy	DOC, PDF	1	N/A
Task 14	**Guidance and Report**				
	Updated DTM/DODI Instruction	Electronic & Hard Copy	DOC	1	As Needed
	Updated ETP/CR specific guidance documents, and templates	Electronic & Hard copy	DOC, PPT	1	As Needed and/or 11/1/20XX 05/1/20XX
	Internal Process Guidance/Instructions	Electronic & Hard copy	DOC, PPT	1	As Needed
	Introduction and Summary for ETP/Congressional Report	Electronic & Hard copy	DOC, HTML	1	As Needed
Task 15	**Monitoring Transformation Progress (Milestones) (This is an Unfunded Requirement)**				

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
	Monthly DBSMC milestone reports	Electronic & Hard copy	PPT	1	N/A
	Milestone Updates (graphics, charts, tables, displays) to ETP/CR	Electronic & Hard copy	PPT, PPJ	1	N/A
Task 16	**Monitoring Transformation Progress (Metrics)**				
	Monthly DBSMC metric reports	Electronic & Hard copy	DOC, PPT	1	3rd day of month
	Metric Updates (charts, displays) to ETP/CR	Electronic & Hard copy	DOC, PPT	1	02/01/20XX - 08/15-20XX
	Updates to BEA Metric Strategy	Electronic & Hard copy	DOC, PPT	1	As Needed
Task 17	**Automated Tools (This is an Unfunded Requirement)**				
	Develop DITPR User Guide Document for ETP	Electronic & Hard copy	DOC, HTML, PDF	1	N/A
	Updates to the SnaP-IT ETP module user guide	Electronic & Hard copy	DOC, HTML, PDF	1	N/A
	Updates to the Progress Tracker User guide	Electronic & Hard copy	DOC, HTML, PDF	1	N/A
	Updates to the Issue Tracker user guide	Electronic & Hard copy	DOC, HTML, PDF	1	N/A
	ETP/CR Transition Planning Data Requirements Doc(for selection of a BI and ETL tool)	Electronic & Hard copy	DOC	1	N/A
Task 18	**Data Repository Support (This is an Unfunded Requirement)**				
	Technical Support Requirements	Electronic & Hardcopy	DOC	As Needed	N/A
	Vendor Contact Log	Electronic	XLS	As Needed	N/A
	Licensing Log	Electronic	XLS	As Needed	N/A

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
Task 19		**Program Management Support**			
	Weekly Program Status Reports	Electronic	DOC	1	Each Friday
	Weekly BEA Status Report	Electronic	DOC	1	Each Friday
	Weekly ETP/CR Status Report	Electronic	DOC	1	Each Friday
	Program Management Plan	Electronic	DOC	1	As needed on annual basis
	Program Work Breakdown Structure	Electronic	MPP	1	As needed on annual basis
Task 20		**Logistics and Initial Planning Support**			
	Refined Transition Plan	Electronic & Hard copy	DOC, HTML, PDF	1	9/24/20XX
	Work Breakdown Structure	Electronic & Hard copy	DOC, HTML, PDF	1	As required
	Weekly Reports	Electronic & Hard copy	DOC, HTML, PDF	1	Each Friday
	Plan of Action and Milestones	Electric & Hardcopy	MPP	1	10/1/20XX
	BEA Release Schedule	Electric & Hardcopy	MPP	1	10/1/20XX
Task 21		**Transition Support**			
	In-process BEA products (all products) on CD and in HTML	CD	DOC, HTML, PDF	1	10/12/20XX
	In-process Daily Configuration Management Status Report	Hard copy	DOC, HTML, PDF	1	Daily
	EA Weekly Status Report	Hard copy	DOC, HTML, PDF	1	Each Friday
	In-process Technical Modification Specifications	Electronic & Hard copy	DOC, HTML, PDF	1	10/12/20XX
	In-process Test Tickets	Electronic & Hard copy	DOC, HTML, PDF	1	10/12/20XX

Task	Deliverable	Media Type	Format Type	Quantity	Due Date
	In-process architecture builds	Electronic & Hard copy	DOC, HTML, PDF	1	10/12/20XX
Non-Contractual Configuration Items					
	Configuration Control Board Charter	Hard copy	DOC, PDF	As Needed	N/A
	CM Requirements document	Hard copy	DOC, PDF	As Needed	N/A
	Configuration Control Board Procedures	Hard copy	DOC, PDF	As Needed	N/A
	Visualization Plan	Hard copy	DOC, PDF	As Needed	N/A
	I&O Charter	Hard copy	DOC, PDF	As Needed	N/A
	I&O Training Plan	Hard copy	DOC, PDF	As Needed	N/A

Appendix D: TI&E CM Audit Checklist

DCMO CM Audit Checklist

TEAM:		
DATE OF AUDIT:		
	TITLE	**NAME**
ATTENDEES REQUIRED TO CONDUCT AUDIT: *** = INVITED BUT NOT IN ATTENDANCE**	CM REPRESENTATIVE TEAM LEAD GOVERNMENT REPRESENTATIVE ANY OTHER REPRESENTATIVE REQUIRED	

General Questions	**YES**	**No**	**Comments**	**N/A**
• Are you familiar with the (CM) plan and is it being followed by your team members in TI&E?				
• Are all configuration items identified and documented? Complete the attached form for architecture or documentation as applicable				
• Has your team been trained on configuration management activities?				
• Do you follow the documented CM processes? If yes, what processes do you follow?				
• When is the first time the CI is checked into the CM Library?				
• Are designated CIs for your team under appropriate level of CM.				
• What internal procedures you have in place for your team.				
• Where are those stored and does everyone have an access to them.				
• Are your team members knowledgeable about the procedures they are supposed to follow for deliverables? If yes, what procedures do you follow for documentation and Architecture?				
BEA	**YES**	**No**	**Comments**	**N/A**
• Are the builds being done according to plan and schedule, using the baseline library? (Build Team Only)				
• CR Package				

i. What procedure do you follow for putting together a CR package				
ii. Where is it stored				
iii. Do your team members have access to the procedure				
• Are you doing the following for the BEA CRs: • tracking a change request from submission to completion				
• Does someone review each CR package? If Yes, Who				
• Analyze and obtain CCB approval of CRs before starting the work				
• Do you run Bart Reports on the working Encyclopedia and remove the errors if found				
• Do you conduct walkthroughs on the BEA Development Encyclopedia when necessary?				
• Where and how you document the results of the walkthrough				
• Are you familiar with the Configuration Control Procedure? Is it followed by your team members?				
Data Management	**YES**	**No**	**Comments**	**N/A**
• Are you using the CM tools? • Enterprise Elements • CM Library on DKO • BEA Ticket entry on DKO				
• Are you familiar with the User guides?				
* Provide a comment or action item for each review item marked as "NO", and a justification for each item marked "NA".				

Appendix E: Acronym List

Acronym	Description
A&IM	Architecture and Information Management
ANSI	American National Standards Institute
APG	Architecture Product Guide
BDM	BEA Development Methodology
BEA	Business Enterprise Architecture
BI	Business Intelligence
BIP	BEA Improvement Proposal
BRS	BEA Reporting Service
BTA	Business Transformation Agency
CBM	Core Business Mission
CCB	Configuration Control Board
CD	Compact Disk
CES	Core Enterprise Services
CI	Configuration Item
CIL	Configuration Item List
CIO	Chief Information Officer
CM	Configuration Management
CMD	Configuration Management Document
CMM	Capability Maturity Model
COOP	Continuity of Operations Plan
COTS	Commercial Off-The-Shelf
CR	Change Request
CSA	Configuration Status Accounting

Acronym	Description
DBSMC	Defense Business Systems Management Committee
DCMO	Deputy Chief Management Office
DITPR	Defense Information Technology Portfolio Repository
DKO	Defense Knowledge Online
DoD	Department of Defense
DoDAF	DoD Architecture Framework
DTM	Directive Type Memorandum
E2E	End-to-End
EA	Enterprise Architecture
EE	Enterprise Elements
EP&I	Enterprise Planning & Investment
ETL	Extract, Transform, Load
ETP	Enterprise Transition Plan
FAQ	Frequently Asked Question
FCA	Functional Configuration Audit
GAO	Government Accounting Office
HTML	Hypertext Markup Language
I&O	Integration and Outreach
IE	Information Exchange
IEEE	Institute of Electrical and Electronics Engineers
IRB	Investment Review Board
IT	Information Technology
IV&V	Independent Verification and Validation
LL	Lessons Learned
LOE	Level of Effort

Acronym	Description
LRP	Laws, Regulations, and Policies
PCA	Physical Configuration Audit
PMO	Program Management Office
PWS	Performance Work Statement
SA	System Architect (IBM Rational Suite)
SOA	Service Oriented Architecture
TI&E	Technology, Innovation and Engineering